Conclusion

Book Section

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> The many perspectives on environment, development and sustainability are a resource for us to learn from, gain knowledge, and thereby, act appropriately. A major challenge, however, is to work within, while simultaneously challenging, the potentially negative dimensions of difference in terms of inequality and power relations.

The above formed the fourth and final premise for this book which was outlined in Chapter 1. As a result, rather than seek and adopt a single set of unifying ideas about environment, development, and sustainability, the book has deliberately set out to record and embrace difference, both:

- within chapters where authors contrast situations, and concerns and priorities of different actors, and
- between chapters and the different perspectives the authors have brought to bear.

By way of drawing together the book, this last chapter engages with the final proposition, which is to work with difference, and to use the very fact of difference to further our understanding and inform policy and action on environment, development, and sustainability.

First, however, we need to find a way of making sense of the myriad of ways in which the issues and perspectives have been represented by the different authors.

Making sense of difference

Making sense of anything usually starts by creating an order through grouping individual elements within higher-level categories and making links between them. For example a basket of food items might be grouped under the following categories: vegetables, meat, and dairy; or under fresh and processed food. In this vein, a basic approach for examining different perspectives on our environment, is to divide them into intrinsic and instrumental ways of valuing it. Chapters 16 and 26 expand on this distinction at a conceptual level, but basically, when we value the environment for its intrinsic worth, we are valuing

it for itself, as something 'natural', which we then seek to conserve. When we value its instrumentality, however, we do so in terms of its practical use for human beings.

Differences arise through the emphases we put on each of these ways of valuing the environment. This is illustrated in this book by Ben Crow (Chapter 8) where he contrasts one view in the United States of reverence for wilderness, and another which is more socially situated and concerns the dumping of toxic waste arising from the instrumental use of the environment. Dina Abbott (Chapter 9) makes a similar point when she contrasts the desire of Mumbai's richer residents for open, wild space, while its slumdwellers view the environment in public health terms. Intrinsic values also surface in Roger Wheater's description of national parks in Scotland (Chapter 12) and Kevin Winter's (Chapter 24) account of collective action to maintain natural indigenous vegetation in the Betty's Bay area of South Africa.

One should note, however, that intrinsic values do not necessarily predominate solely among richer, socially privileged people as might be implied from a casual glance at these chapters. Although not featured as a chapter in this book, the national park movement in England and Wales in the 1930s was at least in part a working class movement to gain access to the wild uplands that lay between industrial cities. These uplands were highly valued as an escape from the drudgery and alienation of the factories.

Thus, the real world is messy and even in situations where intrinsic values are apparently to the fore there is often an overlapping instrumentality in terms of human needs. National parks, wild open spaces in cities, and community organization to preserve indigenous vegetation are all responses to these needs which involve managed preservation of a 'natural' environment. Although such needs are unlikely to be seen directly in material terms they can nevertheless be conceived as developmental.

While accepting the real-world messiness, the intrinsic–instrumental distinction is useful for both thinking about the perspectives of different people and of thinking about one's own perspective, as Martin Reynolds argues in Chapter 16. Most authors of this book, however, have assumed a more explicitly instrumental value for the environment, accepting that it is a material resource for 'development' (first premise, Chapter 1). This is true whether the 'development' relates to rich 'developed' countries or to poorer 'developing' ones.

Consequently, most chapters tend to consider environmental change in relation to different views of social and economic development and of how both environmental resources and development pathways can be sustained. Generally speaking these authors qualify more or less explicitly the view that development is, or should be, simply a matter of economic growth. Whatever the other arguments, at a global level, unbridled economic growth is probably unsustainable environmentally (Chapter 15), particularly when the emergence of China as an economic power (Chapter 2) is taken into account.

What we have then, at global, regional, national, and local scales, is an array of differences in which environment and its relation to development and sustainability are constructed. We might categorize such differences under the following headings:

- *Environment as a source of livelihood*. In economically poor countries where the population is still predominantly rural, for example in Uganda (Chapters 3 and 12), Niger and Ethiopia (Chapter 4), Kenya (Chapter 19), and Zimbabwe (Chapter 23), the environment is a more direct source of livelihoods than in richer, urban-based countries. Insofar as development concerns sustaining and improving rural livelihoods, several

of these chapters focus on the conflicts surrounding how environmental resources are deployed, and of whose development they are serving. The one chapter (13) which concerns direct use of an environmental resource for livelihoods in a rich-region context—along the River Rhine in Western Europe—also interestingly focuses on conflicts over its various uses and of how they are managed across several countries.

- *Environmental constructions based on social difference*. We have already noted the different constructions between the poor and rich in Mumbai, and between middle class and poor ethnic minority communities in the United States. Chapter 14 also contrasts the environmental constructions around waste management in relatively poor Kampala (Uganda)—where it constitutes a public health concern—and relatively affluent Birmingham (UK), where the concerns are around waste minimization and recycling.
- *Sustainability constructions arising out of political circumstance*. In Chapter 5, Petr Jehlička argues that people in Eastern European countries have long practised waste minimization and a high degree of self-sufficiency, practices which are at odds with sophisticated 'end-of-pipe' technological solutions to waste management in the European Union. These East European practices are a legacy of the Soviet bloc of which these countries were part from the end of the Second World War until the last decade of the twentieth century. Waste minimization was a response to the austerity of these years, where as much as possible was reused, while food self-provisioning allowed a measure of independence from totalitarian rule. The collapse of the Soviet Union also had a big impact on communist Cuba because it formed the latter's main export market. James Warren argues in Chapter 6 that this, combined with the ongoing United States blockade of Cuba, has resulted in country-wide austerity, yet a transport system which, in contrast to transport in western capitalist societies, is more sustainable because of its lower reliance on the private car.

While the above suggests diverse constructions of environment, development, and sustainability within and between places, based on livelihood opportunities, social differences, and political circumstance, further constructions can be seen to arise from different kinds of professional knowledge of the book authors themselves, which don't necessarily belong to any particular place. Chapter 26 highlighted one way of categorizing these different knowledges, distinguishing between science, social science, and technological backgrounds. They are examined briefly below to draw out their respective emphases, but note that such generalizations must be qualified as nobody fits their categorization exactly and one should avoid dangers of stereotyping.

- *Science background*. These chapter authors have examined the interactions of the human world with the physical and non-human biological worlds (respectively Chapters 10 and 11). They conclude that there is a problem. The great cycles—the carbon and hydrological cycles—and the ecosystems comprise interdependent elements, and there is also interdependence between these cycles. Human activity is running roughshod over this delicate interdependence, particularly in relation to the carbon cycle (with knock-on effects for the hydrological cycle and ecosystems) where it is pushing the world to a tipping point through climate change (Chapter 10). There

is an inescapable logic, and hence determinism, to the scientific analysis—human beings must take actions to restore the interdependent balances (Smith *et al*. 2007). The scientists tend to frame action, therefore, in terms of goals which need to be achieved, these goals having been determined through scientific analysis.

- *Social science background*. These chapter authors have focused more on the relationships of people and social groups with the environment. They thus provide reasons why people relate to the environment in particular ways, as noted above. Social scientists also analyse how science can be mobilized to support economic and social change, as has been in the case of establishing tissue-culture bananas for commercial production in rural Kenya (Chapter 19).
- *Technological background*. The authors who would describe themselves in this way have generally framed the issues in terms of what is practically possible. This often involves an assessment of technical possibility and desirability in particular social, economic, and political contexts. Thus, Chapter 4 concerns enabling the farmers in Niger and Ethiopia to build on their local knowledge to make incremental improvement to water supply and irrigation. Chapter 18 tells the story of policies to make London carbon-neutral within a particular political context. Chapter 20 argues that sustainability on a large scale requires a design-systems approach, which integrates the environmental, social, and economic dimensions of sustainability. Chapter 21 describes tools that can be used for integrating these dimensions and working holistically in a specifically private sector context, while Chapter 25 focuses more generally on the tools that are necessary to help make decisions that incorporate environmental as well as economic, social, and other concerns.

Another way of dividing the author perspectives is between those who are academics and work in universities, and those who are practitioners, working practically towards a goal, however distant, of sustainable development. Although there are overlaps in the sense that many of the practitioner authors also have strong academic qualifications, it is quite easy to tell them apart. The practitioners obviously think of themselves as, and have a sense of pride in being, active agents in the processes, and their chapters tend to promote ways of working in which they themselves engage. Chapters 22 and 23, which describe partnership and participation approaches in Zimbabwe and are written by practitioners of the regional NGO, Environment Africa, are a classic example. So too is Chapter 7 which reveals how an environmental movement in Australia works.

In contrast, the academic authors tend to think about action as something separate from themselves, where they stand back in order to analyse. Examples include Chapter 9 on different actions in Mumbai, Chapter 13 on conflicts over environmental resources on the River Rhine, Chapter 17 on how sustainable development policy and action is constructed in Wales, and Chapter 24 on how people came to act collectively on environmental initiatives in Betty's Bay, South Africa.

Both practitioner and academic perspectives have advantages. The practitioners' contribution is their ability to provide lived insights and experiences of what it means to act. The academics' contribution is the insights to be gained from standing back, conceptualizing (and thus helping provide analytical tools for others to use), and bringing a more generalized knowledge to bear on situations.

Difference as a resource, and interdependence

Despite having put the perspectives and cases of previous chapters in some semblance of thematic order, the overwhelming picture is of a complex diversity (third premise, Chapter 1). Can the picture be made to hang together? Chapter 1, and the book's fourth premise repeated above, suggested that, rather than worry about difference, we should embrace it as a resource for learning and constructing knowledge through joint engagement about environment, development, and sustainability and the actions we should take. Rather than an end point, sustainability then becomes a process of continuous learning for **innovation** in its general sense as knowledge put to productive use (Johnson and Wilson 1999), a view also put with respect to attempts to design and construct eco-cities at the end of Chapter 21. This view also accords with sustainability's dimension of robustness—the ability to continue over time (second premise, Chapter 1). Such robustness might partly be about pre-empting shocks through learning and taking action, but it is equally about learning to cope with them and take adaptive action when they do occur.

The point about difference being a resource for learning is not to try and make us all the same, but (to draw a parallel with the sustainable use of physical resources) to use that difference productively while sustaining it for further learning. This requires, first, respect for each other and our different knowledges, but also acceptance that what we learn together and evolve will always be mediated by our prior knowledge which is produced by our personal experiences and histories. This is implied in Chapter 4 which argues for building on existing knowledge to make incremental improvements to water supply and irrigation in rural Niger and Ethiopia. It is, however, important not to fall into the essentialist trap of romanticizing local knowledge as being the only credible knowledge. When the authors of Chapter 23, for example, recount the moment that they realized that the champion farmer in Zimbabwe had come to understand the principles of sustainable development the 'African way', we should understand the comment in terms of the farmer mediating new knowledge through what he knows already, rather than essentialist notions that Africans are unchanging due to some primordial traits.

Difference as a resource for learning through joint engagement is the optimistic side of the coin. On the other side, difference between people and social groups is equated with power, inequality, and injustice. Chapter 15 points to the growing social inequalities under processes of **globalization**. As already noted, at local scales the book has witnessed inequalities and power struggles between poor and rich in Mumbai (Chapter 9) and between tropical forest dwellers and their government and big private corporations in Uganda (Chapters 3 and 12). Meanwhile, at country scales, we have seen that, despite its economic growth, people in China are poorer than many other parts of the world (Chapter 2), that Eastern Europe is having to take on environmental agendas of Western Europe in order to gain accession to the European Union (Chapter 5), and that Cuba is locked in a power struggle with the United States (Chapter 6).

Writing from a social science perspective, David Humphreys in Chapter 26 also points to how the most powerful actors influence constructions of knowledge so that they represent, and perpetuate, their interests. Such constructions can then become internalized by everybody and appear as 'common sense'. This critical perspective on how knowledge is constructed is also often applied to participatory and partnership approaches to action (Cooke and Kothari

2001; Hickey and Mohan 2004) that are promoted in several chapters of the book. The point is that power differences do not simply melt away because of the label 'participation'. Adeline Muheebwa's call for inclusiveness of women and youth in community forest management in Uganda (Chapter 12) is an implicit acknowledgement of this critique.

Taking on board both the optimistic and pessimistic perspectives on difference presents a conundrum. There are two possible ways out, both of which invoke the concept of interdependence:

1. Establishing interdependence through existing common practical interests. Most likely, such interdependence and common interest will have emerged in particular places and their particular histories. It is usually observed at a local scale, where there is a relatively high degree of social cohesion. The best-documented example in this book is the collective action of relatively privileged white South Africans in Betty's Bay for preserving the indigenous flora (Chapter 24).
2. More commonly, and from local to global scales, is to establish interdependence out of our differences, even when these are also a function of social and political inequalities. One clue here is that nobody has a monopoly on power, and there is always room for negotiation. The very term 'interdependence' recognizes this and implies a certain mutuality in terms of meeting the practical interests of different groups. Thus:
   - At a local scale, Chapter 9 suggests that the rich and poor of Mumbai are in fact interdependent which gives the latter some negotiating power. Chapter 22 refers to mutuality as 'win–wins', in this case between the private sector, local government, local community, and an environmental NGO over the state of the river which runs through Harare, the capital of Zimbabwe.
   - At a country scale, Chapter 17 describes the ways in which the Welsh Assembly Government promotes engagement between multiple stakeholders from both inside and outside government in policy development and action for sustainable development. Alan Thomas thus refers to a process of governance rather than government, where plural interests are accommodated. The broad governance structures for National Parks in Scotland described in Chapter 12, operate also with a range of stakeholders.
   - At a global scale, Chapter 15 suggests that global inequality, professional insecurity, and the impacts of climate change might combine to bring to a halt the globalization process.
   - Working across scales, Chapter 19 examines how a tacit (if possibly temporary) agreement emerged on the need to develop tissue-culture bananas in rural Kenya—involving scientists, government officials, international aid donors, and local farmers.

The above two ways of viewing interdependence rest on either already having in place evolved, common, practical interests or consciously negotiating collective ways of meeting the diverse interests of social groups. Being organized around parochial, practical interests inevitably raises the question, however, whether such actions are sufficient to meet general environmental challenges such as climate change which don't necessarily map onto immediate interests. In themselves they are undoubtedly insufficient, but they are nevertheless the starting point for changing the only thing we can change, which is ourselves (Weick 1995, 2001). Rather than seeing negotiations to meet diverse practical

interests as boundaried activities, therefore, they can be viewed as starting points for working together and establishing trust. Mutual trust is a prerequisite for deeper communication and hence joint learning because it helps us to expose ourselves and our ideas, and be open with one another. The German philosopher Jürgen Habermas (1990) refers to joint learning in this way as 'communicative action'.

As noted above, Smith *et al*. (2007) point to the contribution of science in having established the 'fact' of interdependence within the non-human world. This is a crucial general contribution to our factual understanding over and above the specific analyses provided by science of, for example, climate change or biodiversity loss. Smith and colleagues also argue, however, that, at the human level, interdependence has to be seen as much more emergent, achieved in the present through negotiations of interests and meanings. This conclusion is also borne out by the chapters of this book and the analysis above. By bringing together such a variety of authors, themes, and situations under one volume the book as a whole has also contributed in a small way to this emergent interdependence.

SUMMARY

- A basic way of categorizing difference in relation to environment, development, and sustainability is through the relative emphasis put on the environment's intrinsic and instrumental value.
- This book has highlighted subcategories with respect to the instrumental use of the environment for economic and social development. These subcategories include constructions of environment in terms of different livelihood opportunities, social difference, and political circumstance.
- Different approaches to environment, development, and sustainability can also be categorized according to professional perspectives—this book has been authored by scientists, social scientists and technologists, and academics and practitioners.
- If sustainability is conceived as a process of joint learning and consequent action, difference between people and groups is a valuable resource. As a downside, difference is also associated with inequality and more/less powerful groups. The concept of interdependence, however, implies that nobody's power can be absolute and there is room for negotiation of interests leading to joint learning for sustainability.

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